

Forest Plan Monitoring

Wasatch-Cache National Forest



United States Department of Agriculture
Forest Service
Intermountain Region
Wasatch-Cache National Forest

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A Note from the Forest Supervisor

The Revised Forest Plan for the Wasatch-Cache National Forest was approved March 19, 2003. We have now been implementing this new Plan for about six months and would like to share some of our progress with you. An important part of keeping the Plan current and adapting it as conditions change or as we learn from experience is monitoring. The Revised Plan Monitoring and Evaluation section (Chapter 4, pg. 4-105) outlines the program for following up on important decisions made in the Plan. We have now developed further steps or "protocols" for moving forward with this program. These are displayed in the document that follows. It is too early to actually report on what we have accomplished in each area. We plan to do that next spring upon the one-year anniversary of the Plan's approval.

In addition to monitoring progress, we have found a few errors, omissions, and needs for clarification with the Revised Plan. We are posting these as errata on our website (www.fs.fed.us/wcnf) under the Projects and Plans heading for your information.

As you know, each project we implement under the direction of the Revised Plan includes public involvement and environmental analysis. We encourage you to stay involved in these processes so we can learn together the best ways to move toward desired conditions described in the Plan.

If you have any questions about the monitoring protocols, please contact Melissa Blackwell at (801) 524-3908 or Julie Hubbard at (801) 524-3907.



1 *Education and Information*

FOREST PLAN OBJECTIVES TO ACCOMPLISH DESIRED CONDITIONS

Develop within 1 year, and subsequently implement a Forest Interpretation & Education Plan with responsiveness to education/enforcement issues raised during Plan revision. This Plan should integrate funding support including partnerships, for education and enforcement in key focus areas.

Develop key messages for focus areas within 1 year and set measurable education/enforcement goals. Focus areas are: off-highway vehicle use, recreation user ethics, role of fire and fuels hazards, noxious weeds, and watershed health.

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are we delivering key educational/enforcement messages identified during plan revision to Forest employees and users? (Key focus areas are: off-highway vehicle use, recreation user ethics, fire's role/hazardous fuels, noxious weeds, watershed health.)

Indicators: Degree to which key messages have been integrated into internal and external programs.

How to measure: Number of products conveying key messages (i.e. Publication; Information products; Presentations; Public contacts).

Protocol (Plan): Establish a team with representatives from each Ranger District to develop "Key Messages" for each of the six focus areas. Team will identify effective ways to convey key messages to target forest user audiences working with representatives from user groups and other partners.

Effectiveness Monitoring

What are we trying to find out: Do they provide resource protection and/or reduce recreation conflicts? Are users changing behaviors?

Indicator: User groups assisting in protecting resources and educating other users.

How to measure: Number of user groups and individuals involved.

Indicator: Perceptions of recreation users with regard to conflicts.

How to measure: Survey responses from users.

Protocol (Plan) for effectiveness: Not developed at this time.

2 Recreation Opportunity

FOREST PLAN OBJECTIVES TO ACCOMPLISH DESIRED CONDITIONS

Update the Salt Lake, Ogden and Logan Ranger District Travel Management Plans within 5 years (Includes user created route inventory, maintenance levels 1 and 2 roads analysis, updating of Road Management Objectives, and refining of winter decisions, where appropriate).

Expand communication medias (signs, maps, brochures, and websites) to improve user knowledge of opportunities, restrictions, and riding conditions. Complete this within 2 years for messages common to all areas and within 1 year of completing Travel Plan update decisions, for messages specific to a particular area.

Expand or initiate peer education through motorized use organizations and dealerships within 2 years for winter and 3 years for summer.

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are we providing recreation opportunities for motorized, mechanized, and nonmotorized users while protecting and restoring watersheds and providing for needs of wildlife?

It is assumed that if travel management plans are updated and followed, and designated routes are maintained, watersheds will be restored, wildlife provided for and user conflicts will be reduced.

Indicators: User routes and modes of transportation are identified; Recreation Opportunity Spectrum maps updated to reflect Travel Plan updates.

How to measure: Travel Management Plans updated for the Ogden, Logan and Salt Lake Districts.

Indicator: Actions taken: signs installed; maps available; enforcement occurring.



How to measure: percent of routes signed; number of outlets for maps; staff contacts.

Protocol (Plan): Summarize progress on Travel Plan updates including comparison of opportunities with existing conditions. Compile information about where and how updated Travel Plans are being implemented for each Ranger District.

Effectiveness Monitoring

What are we trying to find out: Are there a variety of quality recreational opportunities available? (Develop additional factors or criteria as needed.)

Indicators: Loop trails provided for all uses.

How to measure: Miles of loop trails (motorized and nonmotorized).

Protocol (Plan): Develop GIS assessment of existing condition and use in comparisons over time as Travel Plans are updated.

Indicator: User satisfaction.

How to measure: Trailhead surveys.

Protocol (Plan): Develop and conduct surveys of forest users.

What are we trying to find out: Are users complying with Travel Management Plans?

Indicators: Degree of compliance with designated routes.

How to measure: Non-compliance instances (trends).

Protocol (Plan): Compile reports from Forest Patrol Officers, Law Enforcement Officers and observations of on-the-ground managers.

What are we trying to find out: Are users helping to prevent or reduce impacts, staying on designated routes?

Indicators: Degree of assistance.

How to measure: Individuals assisting in compliance, education and enforcement.

Protocol: Compile reports on Ranger District user group participation such as Goodwill Riders.



3 *Vegetation Management*

FOREST PLAN OBJECTIVES FOR ACHIEVING DESIRED CONDITIONS

Allow fire to play a more active role in returning vegetation to historic ranges of variation by developing and incorporating Wildland Fire Use for priority areas of the Forest into the Wasatch-Cache Forest Fire Management Plan at the rate of one per year for priority areas.

Stimulate aspen regeneration and reduce other encroaching woody species in aspen by treating (fire use and/or timber harvest) approximately 3,200 acres average annually¹ for a 10-year total of 32,000 acres.

Restore natural disturbance patterns and increase age-class diversity in conifer cover types by treating (timber harvest and/or fire use) approximately 850 acres average annually¹ for a 10-year total of 8,500 acres.

Increase grass and forb production and plant species and age-class diversity in sagebrush and pinyon/juniper by treating approximately 2,000 acres average annually¹ for a 10-year total of 20,000 acres.



FOREST PLAN MONITORING

Implementation/Effectiveness Monitoring

What are we trying to find out: Are vegetation cover types (by ecological subsections) trending toward Properly Functioning Condition (PFC)?

Indicators: Patch size, cover type, and age class distribution.

How to measure: Acres in cover types/age classes by ecological subsections and cause of change (prescribed fire, wind throw, wildland fire use, harvest, mechanical or chemical treatment).

Protocol (Plan): Compare GIS layers of vegetation disturbances (timber harvest areas, fire perimeters, fuel reductions) with existing vegetation for PFC Assessment. Use Revised Forest Plan Guideline 14 for comparison of existing to desired conditions. First annual map to serve as baseline for monitoring changes in vegetation cover each year. Use ecological subsections nested within the larger ecological sections for overall assessment of PFC. Focus mapping on vegetation cover types identified as highest risk.

¹ We expect to begin the decade with smaller acreages, ramping up over the first 5 years and with experience and skills gained during that period, to be able to achieve larger acreages over the last 5 years – bringing the total to the desired acreage. However, where fire is the selected treatment, air quality and weather are limiting factors outside our control.

4 *Fuels Reduction*

FOREST PLAN OBJECTIVES TO ACCOMPLISH DESIRED CONDITIONS

Treat approximately 2,000 wildland urban interface acres annually for a 10-year total of 20,000 acres.

Expand outreach and education by helping communities and homeowners recognize fire hazards, and design fire resistant homes and landscapes by participating annually in Community Planning meetings and city or rural planning groups.

Expand community participation in fuels treatment and restoration and assist in the development of community fire plans by assisting State and private groups to develop 3 to 5 fuel reduction plans annually.

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are fuels reductions in the urban interface protecting property and human health and safety? Is the public becoming more aware of the threat?

Indicators: Reduction of hazardous fuels at the wildland urban interface and awareness of landowner responsibilities.

How to measure: Acres of hazardous fuels treated along the urban interface compared with total acres of interface having fuels hazards.

Protocol (Plan): Develop maps of condition classes forestwide using vegetation cover types, densities of nearby structures (such as buildings) and disturbance layers to show priority areas for reduction of hazardous fuels. Annually map areas of fuel reduction for comparison.



Effectiveness Monitoring

What are we trying to find out: Have the size of unwanted wildland fires been decreased as a result of fuels reduction efforts along urban interface areas?

Indicators: Fire acreages in the urban interface, relationship to treated areas and nontreated areas.

How to measure: Size and location of unwanted fires within interface compared with historic information.

Protocol (Plan): Display GIS maps of unwanted fires and relationship to hazardous fuels, treated and untreated. Compare to historic information, interpret and summarize results.

5 *Rangeland Management*

FOREST PLAN OBJECTIVES TO ACCOMPLISH DESIRED CONDITIONS

Fully implement the Rangeland Health Amendment Forestwide by finalizing riparian classification and notifying permit holders of utilization standards based on this classification within 1 year.

Validate key areas and focus monitoring of utilization standards in Allotments containing riparian dependent TES within 3 years.

Develop ground cover potentials for missing vegetation cover types within 2 years.

Assess/validate existing conditions and continue establishing long-term trend monitoring for 10% of Allotments annually.

Establish clear expectations with all permit holders to achieve stated purposes within 1 year.

Assess and prioritize noxious weed infestations for appropriate treatment within 1 year.

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are rangeland standards and guidelines being implemented and actions being taken to correct problems? The assumption is that when range standards and guidelines are being followed conditions will improve.

Indicators: End of season forage utilization at Key areas; documented non-compliance.

How to measure: Percent of allotments administered to standard and documented results of this administration.

Protocol (Plan): Individual allotment annual permit administration and utilization monitoring is documented and summarized. Compile results forestwide.

Effectiveness Monitoring

What are we trying to find out: Do rangeland plant communities have desired species composition and is ground cover adequate?

Indicators: Riparian and upland condition and trend. Key areas at Desired Future Condition (DFC) or moving toward DFC.

How to measure: Acres meeting, moving toward, or not moving toward Forest Plan Objectives (desired conditions), relative proportion of verified vs. estimated acres reported.

Protocol (Plan): Develop and test "Rapid Range Condition Assessment" process for documenting range condition. Continue to monitor long-term trend using FSH 2209.21, 44 on scheduled priority allotments. Compile results from each Ranger District for forestwide reporting.

What are we trying to find out: Are noxious weeds infestations increasing or decreasing in number and/or size?

Indicators: Noxious weed infestations.

How to measure: Number and size (acres) of existing and new infestations of noxious weeds. Acres of noxious weeds identified, controlled, reduced.

Protocol (Plan): Update GIS layer of noxious weed infestations. All noxious weed observations will be GPSed or location described for addition to map layer. Treatment areas will be reported by location annually in a GIS layer for purposes of comparing treatment with infestation for trends.

What are we trying to find out: Are springs and wetlands associated with livestock watering functioning properly?

Indicators: Water developments and spring sources condition.

How to measure: Percent of “critical” areas – springs, wetlands functioning properly.

Protocol (Plan): Develop simple checklist for field verification of proper functioning. Inspect and document water sources in allotments as part of administering to standard. Results to be summarized with riparian and upland condition and trend.



6 *Recreation Concentrated Use Areas*

FOREST PLAN OBJECTIVES FOR ACCOMPLISHING DESIRED CONDITIONS

Inventory undeveloped recreation sites in General Forest Areas and identify Concentrated Use Areas (CUA) forest-wide within 1 year.

Develop and implement CUA recreation plans for CUAs prioritizing those areas with the highest use and impacts for both recreation activities and resource conditions. Work with users to design sites meeting their needs and desires while protecting resources including scenery. Complete 1 site-specific plan every 3 years for highest priority areas. Establish appropriate density for designated concentrated use sites for these areas during plan development.

Initiate public education and outreach explaining the purpose of the new management actions during and after development of CUA recreation plans. Communicate through variety of available medias (including signing on site) the opportunities and restrictions within 1 year of plan completions.

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are we managing Concentrated Use Areas to provide for recreational amenities while meeting standards and guidelines for resource protection?

Indicators: Concentrated Use Area Plans developed and implemented; Concentrated Use Areas actively managed.

How to measure: Number of completed Concentrated Use Plans; documentation of meeting or not meeting resource standards and recreational amenities.

Protocol (Plan): Identify and delineate CUAs on the Forest. By District, determine CUA priority for initial site inventory using interdisciplinary team assessments of highest impacts to resources within a CUA boundary. Conduct CUA site(s) inventory (activities, resource impacts, management needs). Complete CUA plans including desired future condition, Recreation Opportunity Spectrum setting and Desired Future Landscape Character; develop management transition plans. Consider health and safety, resource impacts, characteristics of ROS setting and landscape character, investment needed, and monitoring.

7 Major Trail Development

FOREST PLAN OBJECTIVES FOR ACCOMPLISHING DESIRED CONDITIONS

Focus trail development and management emphasis on Bonneville Shoreline and Great Western trails, working with the public and other agencies to complete these trails using partnerships and grants as much as possible, while minimizing impacts to big game winter range, adjacent property owners, and Wilderness.

Coordinate with the State, Counties, BLM and local partners to establish a trail system (Shoshone Trail) in northern Utah to address the demand for motorized trail recreation while decreasing unauthorized uses in more sensitive areas.

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are trail development efforts focused on development and management of Bonneville Shoreline, Great Western and extended motorized trail opportunities, such as the Shoshone trail concept?

Indicators: Trail constructed.

How to measure: Miles of Bonneville Shoreline, Great Western and extended motorized trails developed.

Protocol (Plan): Salt Lake and Ogden District Trail Program Managers summarize annual progress on Bonneville Shoreline Trail and Great Western Trail to include easement acquisition, actual construction, maintenance, partners, grants, and mitigation measures. Ogden and Logan Ranger Districts will summarize progress in providing a Shoshone Trail "concept" within Travel Plan update.

Effectiveness Monitoring

What are we trying to find out: Are we working with the public and other agencies to complete these trails using partnerships and grants as much as possible? Are we minimizing impacts to big game winter range, adjacent property owners, wilderness, and resources?

Indicators: Partnerships, grants, and volunteerism; Utah Division of Wildlife Resources coordination; property owner involvement; reduction in user-created trails.

How to measure: Numbers of participants. Route segments with winter range and/or wilderness mitigation. Percent of property owners giving informed consent.

Protocol (Plan): Compile accomplishments from each Ranger District annually including mitigation employed.



8 *Management Indicators*

FOREST PLAN MONITORING OF POPULATIONS

What are we trying to find out: What are the baseline and population trends for the five species selected as management indicators?

Management Indicator Species: Goshawk

Indicator: Active goshawk territories.

How to measure: Number of active territories.

Protocol (Plan): Monitoring will continue to be conducted annually using a random sample of at least 50% of all known territories on the Forest. As of July 2003 there are 38 known territories on the Kamas/Evanston/Mt View Ranger Districts, 13 on Ogden/Logan (2 of the 13 were identified in 2003), and 3 on Salt Lake. Once a territory is identified, it always remains in the pool of known territories. New territories will be included in the sample as they are located. If monitoring reveals three consecutive years of 20% or greater decline in territory occupancy, further evaluation must occur to determine the cause and appropriate corrective action. This evaluation will be conducted by an interagency team. Corrective actions will be determined in part based on the scale at which populations are declining. (Source: Utah Goshawk Amendment, 2002)

Management Indicator Species: Snowshoe hare

Indicator: Snowshoe hare presence and population index.

How to measure: Pellet counts along transect.

Protocol (Plan): Establish transects in each of seven vegetation cover types to be monitored annually (aspen, mature/old and young; lodgepole pine, mature/old and young; mixed conifer; spruce/fir; and Douglas fir) in the Bear River Range, Wasatch Mountains, and Uinta Mountains. Coordinate with ongoing monitoring on North Slope Uinta Mountains. Compile, interpret and report results including trends.

Management Indicator Species: Beaver

Indicator: Beaver populations across the forest.

How to measure: Number of active beaver colonies per square mile.

Protocol (Plan): Develop a sampling scheme based on quadrant sampling methodology for forestwide sampling at the rate of 10% (every tenth section), conduct ground surveys making counts of fall food caches. Baseline surveys to be conducted in 2003 and 2004 and the same sections resurveyed once every 3 to 4 years to establish population trends.



Management Indicator Species: Cutthroat trout

Indicator: Cutthroat trout population estimates.

How to measure: Fish condition index.

Protocol (Plan): Continue on-going monitoring conducted on scheduled watersheds across the forest on a ten-year rotation. Stream reaches are sampled using electro-fishing equipment allowing for temporary fish collection and measurements providing information necessary to develop fish population estimates, fish condition index (weight-length relationship), fish biomass production, fish size class distribution, and fish species composition. Methodology is consistent with that used by Utah Division of Wildlife Resources making comparisons with their data possible. Compile and interpret results annually.

FOREST PLAN MONITORING OF COMMUNITIES

What are we trying to find out: Are oak, maple, and sagebrush vegetation cover types trending toward Properly Functioning Condition (PFC) (i.e. providing for the diversity of habitats they provided for historically)?

Management Indicator Communities: Oak/Maple and Sagebrush

Indicators: Patch size and age class distribution within these cover types.

How to measure: Relative amounts of acres by cover type/age class/patch size and causes of change (prescribed fire, wildland fire use, mechanical or chemical treatment).

Protocol (Plan): Compare GIS layers of existing vegetation characteristics for these cover types with disturbances (fire perimeters, fuel reductions, chemical treatments) for PFC assessment update. Use Revised Forest Plan Guideline 14 for comparison of existing to desired conditions. First annual map to serve as baseline for monitoring changes in vegetation cover in these types each year.

FOREST PLAN MONITORING OF HABITAT RELATIONSHIPS

What are we trying to find out: Are forest management actions affecting Management Indicator Species (MIS) and what is the relationship between habitat and population trends?

Indicators: Conditions of habitats, population trends.

How to measure: Changes in habitat for each MIS; population trends and potential relationships.

Protocol (Plan): After baselines are established for MIS and as population trends can be determined, compare these with conditions of habitat (from other Forest Plan Monitoring items) resulting from Forest management (both active and passive). Identify relationships and other factors that should be considered in drawing conclusions.

9 *Endangered Species Act*

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are we protecting Threatened and Endangered species and their habitat while implementing the plan?

Indicators: Terms and conditions or reasonable and prudent measures, which result from consultation (formal or informal) under Section (7) (a) of the Endangered Species Act.

How to measure: Numbers and types of mitigation or protection measures implemented, documented results.

Protocol: Summarize annually project related mitigations aimed at Threatened and Endangered species, and document whether these were implemented as prescribed.

10 *Resource Protection*

FOREST PLAN MONITORING

Implementation/Effectiveness Monitoring

What are we trying to find out: Are we implementing terms and conditions, mitigation measures, Best Management Practices, standards and guidelines, and are these effective on new and where appropriate, existing projects?

It is assumed that as mitigation measures, Best Management Practices, and standards and guidelines are implemented on individual projects, their effectiveness will be evaluated and measures will be adjusted as needed to provide resource protection.

Indicators: Conditions on the ground (varies by nature of specific project) and effectiveness of measures applied.

How to measure: Numbers and types of Best Management Practices, standards and guidelines implemented, documented results.

Protocol (Plan): At least 2 Projects will be selected annually for Interdisciplinary Team on-site monitoring. Individual disciplines may need additional time for specific monitoring that will then contribute to the interdisciplinary review. Project mitigation measures and relevant Standards and Guidelines (from the environmental analysis documentation) will serve as the template for documenting this monitoring. Observations about how well the implementation achieved the desired results should be documented.

11 *User Density Thresholds*

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are we approaching user density thresholds in areas mapped with Semi-Primitive Recreation Opportunity classes?

Indicators: Party contacts in areas anticipated to reach threshold.

How to measure: Average weekend number of party contacts per 8-hour period by area (trail or designated route).

Protocol (Plan): Identify, geographically locate, and classify trails on the Forest within Wilderness/ Semi-Primitive Non-Motorized, Semi-Primitive Non-Motorized and Semi-Primitive Motorized ROS classifications. By Ranger District, determine trail priority for visitor use surveys using interdisciplinary team ratings considering current ranges of user densities, resource impacts and needed investment for management of the trail to standard. Determine highest Forest priority and conduct measurement of visitor use to establish base-line and long-term trends. Use visitor use surveys to establish user density thresholds tailored to specific trails and attractions.



12 NFMA Compliance

FOREST PLAN MONITORING

Implementation Monitoring

What are we trying to find out: Are we complying with appropriate National Forest Management Act requirements?

Indicator: Stocking of lands.

How to measure: Trees/acre, over percent of area treated by tree species.

Protocol (Plan): Conduct stocking surveys on all harvested areas by year five after harvest to determine adequacy with requirements in Forest Plan.

Indicator: Lands suited for timber production.

How to measure: Lands identified as not suited for timber production examined to determine if they have become suited.

Protocol (Plan): This is required every ten years or when the Forest Plan is revised. Document any changes in suitability resulting from timber related or other project environmental analyses or other assessments for consideration at the ten year review point.

Indicator: Harvest unit size limits.

How to measure: Maximum size limits for harvest areas are evaluated to determine whether such size limits should be continued.

Protocol (Plan): Include this as part of the "Resource Protection" monitoring item above. The interdisciplinary team will compare the actual results of harvest with the intent in the harvest design and evaluate whether size limits achieved desired conditions.

Indicator: Amount of destructive insects and disease organisms.

How to measure: Infestations (type and degree) are mapped forestwide annually.

Protocol (Plan): Compare annual reports provided by Ogden Field Office, State and Private Forestry for trends in insect and disease, interpret and summarize.

13 *National Historic Preservation Act*

FOREST PLAN MONITORING

Implementation/Effectiveness Monitoring

What are we trying to find out: Are cultural resources being protected as the Forest Plan is implemented and are mitigation measures sufficient to prevent damage to cultural resources from project activities?

Indicators: Cultural resources identified during project surveys; mitigation measures prescribed to protect these.

How to measure: Number of projects that successfully protected cultural resources.

Protocol (Plan): Annually develop a list of projects where cultural resource protection was warranted and mitigation was prescribed. Review up to 10% of these in the field to determine if mitigation measures were implemented and were effective at protecting the site. Document results.

